

pertinent portion of the cited case law is directed to a situation where an applicant had attempted to overcome a multiple reference obviousness rejection by attacking or addressing *only one* of the multiple references. Such a tactic is indeed improper. However, the present applicant has not attempted to show non-obviousness by attacking only one or the other of the Kneezel or Kondo references.

Instead, the Kondo and Kneezel references have merely been addressed separately and successively (i.e., one at a time), both in this paper and in the previous response. The applicant can see no other way to address a rejection based on two or more references, other than to look at one reference at a time. Discussing both references at the same time would seem to be impractical, if not impossible. The applicant's position was and remains that both references fail to teach or suggest the same claim limitations and, thus, the *combination* of Kondo and Kneezel fails to teach or suggest all of the limitations of the rejected claims.

Cited References Fail to Disclose All Claim Limitations

Independent method claim 1 recites "each swath being wider than a swath printed by a single print element." Claims 2 and 17 recite substantially similar limitations. Claim 1 also recites "wherein each overprinting swath is of a different colour to the previously printed swath which it overprints." Claim 17 recites a substantially similar limitation. Kondo and Kneezel, in combination, fail to teach such a printhead or print traverse.

A. Each Swath Overprinted with Different Color on Next Relative Traverse

Turning first to Kondo, the reference is completely silent as to any pattern of multiple traverses of the printhead and as to any overprinting pattern, method, configuration, or the like. The action has admitted as much at the top of page 2. The action states that "Kondo does not exactly perform overlapped printing in registry with a previous printed swath (by one nozzle scanning at a time) in a further relative traverse printing further swaths." In fact, Kondo is completely silent on the subject. However, the action then states, without any support, that "Kondo suggests moving the print head a distance slightly greater than one nozzle thereby to create overlapped printing almost in registry." Kondo suggests nothing of the kind. *If the Office is to maintain this rejection, the applicant asks the Office to point out where in Kondo such suggestion exists.*

Even if Kondo were to provide such a suggestion, neither printhead configuration (FIGS. 2 or 8) cited by the Office could produce an overprint as recited in claims 1 and 17. Specifically, claims 1 and 17 recite that each previously printed swath is overprinted with a

swath of a different color. The Kondo printheads of FIG. 2 and FIG. 8 cannot accomplish such an overprint based on their nozzle arrangements. However, the applicants would like to again point out that Kondo is completely devoid of any teaching as to subsequent relative traverses of either printhead.

Turning next to Kneezel, the reference teaches a lock-step printing traverse pattern utilizing a printhead with nozzles of one color arranged adjacent one another. Upon even a cursory review of FIGS. 8-12, Kneezel teaches that only *a few swaths* are overprinted with swaths of different colors. Further, such different color overprints occur only many print traverses after the first color swaths are laid down, not on a next subsequent traverse. Claims 1 and 17 recite that each swath is overprinted with a swath of a different color on a next traverse. The Kneezel nozzle arrangement makes such an overprinting virtually impossible.

Further, each successive swath in Kneezel is deposited *such that it does not overprint the previously printed swath*. If the Office maintains that the filling-in of an intermittent swath is overprinting (see FIGS. 8 and 9 and the bottom row progression), then each so-called overprinting is done only in the same color, *not in a different color*, as recited in claims 1 and 17.

The combination of teachings of Kneezel and Kondo fail to teach or suggest the limitation "wherein each overprinting swath is of a different colour to the previously printed swath which it overprints."

B. Each Swath Wider Than a Swath Printed by Single Print Element

Turning first to Kneezel, the reference teaches only printing swaths of the same width as a swath printed by a single print element. To illustrate, Kneezel teaches a plurality of discrete, individual nozzle ejectors 100 arranged in a pair of ejector sets 110 or 111. The nozzles, however, are all *arranged in a single linear row*. The printhead travels perpendicular to the row of nozzles. Thus, each nozzle 100 lays down a single swath during one relative traverse wherein each printed swath has the same width as its respective nozzle. Kneezel fails to disclose or suggest printing any swath in a manner resulting in the printed swath being wider than a single print element, i.e., nozzle 100.

Turning next to Kondo, the action refers generally to FIGS. 2 and 8. FIG. 2 discloses an embodiment of the Kondo printhead. FIG. 8 discloses only a prior art printhead, completely different than, *and to be wholly replaced by*, the FIG. 2 printhead. The printhead in Kondo FIG. 2 has multiple repeating units of different colored, discrete, individual nozzles

7. All of the units are arranged in a single linear row, and the Kondo FIG. 2 printhead only travels *parallel to the single row of nozzles* to print a swath. Thus, each relative traverse of the FIG. 2 printhead can only print one linear swath. Each swath is thus only as wide as a swath printed by a single nozzle. Kondo FIG. 2 cannot print a swath wider than its single row of nozzles.

Kondo FIG. 8 discloses a prior art printhead with a partial row of nozzles 101 illustrated therein. In the prior art FIG. 8, Kondo offers *no disclosure whatsoever* as to which direction this printhead travels. Kondo also does not offer any arrangement of multiple nozzles of the same color, other than as a single row of discrete, individual nozzles as shown. If the FIG. 8 printhead traveled in a direction parallel to the row of nozzles 101, *it can only print a one nozzle width swath* during a single traverse, similar to that of the Kondo FIG. 2 printhead. Thus, the FIG. 8 printhead would not form a swath that is wider than a swath printed by a single nozzle 101.

If the FIG. 8 printhead traveled perpendicular to the row of nozzles 101, it could possibly print multiple swaths, and possibly print a swath having a width wider than that printed by a single nozzle. This is true if similar to the printhead shown in FIG. 1a of the present application. However, no such travel direction or multiple nozzle arrangement for the FIG. 8 printhead is disclosed in Kondo. The FIG. 8 printhead is shown with only a single row of nozzles 101.

Regardless, the FIG. 8 printhead, if traveling in such a direction, could not print side by side swaths of different color in a single traverse *in a repeating pattern*, as recited in all three independent claims 1, 2, and 17. Thus, the action seeks to combine the teachings of FIG. 2 and FIG. 8 in Kondo in order to cover this fatal flaw. This is improper for the reasons discussed below. The Office must instead rely on the teachings of either the FIG. 2 printhead or the FIG. 8 printhead.

If the FIG. 2 printhead is relied upon, then Kondo does not teach or suggest that this printhead can print a swath wider than that printed by a single print element. If the FIG. 8 printhead is relied upon, then Kondo does not teach or suggest a printhead with a nozzle arrangement and swath printing capabilities as recited in claims 1, 2, and 17. *It is clear that the rejection heavily and necessarily relies upon the nozzle arrangement of FIG. 2 in Kondo.*

Therefore, the combination of the teachings of Kondo and Kneezel, taken properly as a whole, fails to disclose or suggest printing swaths of color wherein each printed swath is wider than a swath printed by a single print element or nozzle.

Kondo and Kneezel in combination do not disclose or suggest all of the limitations of independent claims 1, 2, and 17. Therefore, claims 1-40 are not rendered obvious by the purported combination.

No Motivation to Combine Reference Teachings

As the Office well knows, the motivation to combine reference teachings must be found within the references themselves, and not from the applicant's own disclosure. The Office bases the rejection on a combination of Kondo and Kneezel, and also, inexplicably, on a combination of two mutually exclusive printheads (FIGS. 2 and 8) within Kondo. There is no proper suggestion or motivation to combine such teachings that can be found within the references.

Turning first to the Kondo/Kneezel combination, neither reference provides the necessary motivation or suggestion, and none is set forth in the action. The only identifiable "motivation" to combine these references is found at page 2 of the action, which states only that "it would have been obvious to one of ordinary skill in the art ... to provide the controlling steps as taught by Kneezel in Kondo's printhead for printing overlapped print swaths in registry with the previously printed swaths." This is nothing more than a conclusory statement reiterating (or very inaccurately attempting to reiterate) the applicant's claim language. It is clear that only improper hindsight has been employed and that applicant's own disclosure is the sole source of the motivation or suggestion.

No attempt has been made by the Office to put forth a proper motivation or suggestion taken from either Kneezel or Kondo. Thus, the rejection based on the combined teachings of Kondo and Kneezel must fail.

As for combining the teachings of Kondo FIG. 2 and Kondo FIG. 8, the action, at pages 2 and 3, asserts that Kondo claims 1 and 3 teach that the printhead of FIG. 2 can print a swath that is wider than a single nozzle width. Based on this and this alone, the action further asserts that, as a result, *Kondo suggests* combining the teachings of FIGS. 2 and 8. There is absolutely no basis for this completely untenable assertion for several reasons.

First, Kondo actually teaches away from such a combination. To illustrate, Kondo offers the printhead of FIG. 2 as a complete substitution for the inferior FIG. 8 printhead. Combining any of the features of the two printheads is simply not suggested within the Kondo reference.

Second, features of the two printheads simply cannot be physically combined. Kondo explains that the distance of head travel of the prior art FIG. 8 printhead is *the print width plus twice the head width*. This must be true to insure that all colors are appropriately printed, and can be true only if there are no repeating blocks of color nozzles. Thus, the FIG. 8 printhead cannot have repeating blocks of nozzles. In contrast, the FIG. 2 printhead is intended to have, and must have, repeating blocks or units of nozzles in order to perform as intended. Thus, features of the FIG. 8 printhead cannot be combined with the FIG. 2 printhead.

Third, both claims 1 and 3 in Kondo are clearly limited to a single line of multiple nozzle units. Claim 1 specifically recites a single line of 4 nozzles and claim 3 specifically recites a single line of 8 nozzles. Kondo refers to FIG. 2 in describing the arrangement of claim 3. FIG. 2 clearly shows only a single row of 8 identified nozzles. Thus, contrary to the assertions in the action, Kondo FIG. 8 does not specifically teach printing a swath having a width wider than a single print element or nozzle, and Kondo claims 1 and 3 certainly do not. Even if the action were correct in asserting that the combination of FIGS. 2 and 8 disclosed printing any swath wider than a single nozzle element, the combination of FIGS. 2 and 8 is clearly neither suggested nor permissible based on Kondo as a whole.

The action fails to provide a proper motivation or suggestion to combine the teachings of Kondo and Kneezel and the teachings of the Kondo FIG. 2 and FIG. 8 printheads.

Cited Combination Destroys Express Teachings of Both References

By combining the teachings of Kondo and Kneezel as purported in the action, express teachings in both references are destroyed. Such a combination is not proper.

To illustrate, Kondo teaches a single nozzle row printhead that is intended to travel laterally in a direction *parallel to the nozzle row* across a page width. The limited lateral distance traveled is intended to be only as wide as one unit of a repeating pattern of color nozzle units. Upon completing a short lateral traverse, all colors and all pixels for a swath are printed. The Kondo printhead is intended to completely print one and only one swath during a single lateral traverse. The printhead and paper are then indexed lengthwise. Once the

printhead has traversed the length of the paper, the Kondo print process is completed. Thus, the Kondo printhead travels very little, as intended. Further traverses of the Kondo printhead print additional single swaths.

The action purports to combine the print control process of Kneezel to the printhead nozzle arrangement of Kondo. Making this combination is simply not plausible and would destroy both express teachings. Kneezel teaches a process for moving a printhead perpendicular to the row of nozzles, and for printing multiple swaths during each traverse. The Kneezel printhead must traverse the page width completely for each swath and must do so many times. Thus, the Kneezel printhead travels a lot, which is quite the opposite of the Kondo printhead.

The Kneezel process is described at column 8, lines 2-11. The printing procedure is the same for each color ejector and for each ejector set. Kneezel states that:

“the first k ejector in the printhead first places alternating spots of black ink in a particular horizontal row in the grid, while the next k ejector (second from the bottom) **fills in** the alternating spaces which were left by the first k ejector. Similarly, with the y, m and c ejectors, the first of each pair lays down alternating spots and the second of each pair fills in the spaces which had been left by the previous pass of the preceding ejector in the preceding pass (emphasis added).”

As seen from FIGS. 8 -11, the first of the k, y, m, and c ejector pairs lays down alternating spots in the same pattern, and the second of each pair only fills in the spaces between the alternating spots. As described at col. 8, lines 12-29, the second set of ejectors fills in the rows between the alternating swaths of print left by the first set of ejectors. In this way, Kneezel requires that many subsequent passes occur before any overprinting of a swath occurs, and before any given swath is completed. This is the antithesis of what Kondo expressly teaches.

The only way to correctly apply the Kneezel process to the Kondo printhead is for the Kondo printhead to travel perpendicular to the nozzle row. However, operating the Kondo printhead in such a direction would also result in the printhead making multiple passes to print each swath and traveling large distances for each of many multiple traverses. This would completely destroy the express teachings of Kondo.

Alternatively, if the Kneezel process were applied to the Kondo printhead and operated to move the printhead laterally as taught by Kondo, the express teachings of Kneezel would be destroyed. This is because the Kneezel lock-step process requires the

printhead to travel perpendicular to the row of nozzles. The process cannot be properly performed otherwise.

Combining the teachings of Kneezel and Kondo destroys the express teachings of both references. The combination is, therefore, improper and the rejection must be withdrawn.


CONCLUSION

According to the foregoing remarks, claims 1-40 are believed to be in condition for allowance. Reconsideration and allowance of the claims is hereby respectfully solicited.

The examiner is invited to contact the undersigned at the telephone number listed below in order to discuss any remaining issues or matters of form that will move this case toward allowance.

Respectfully submitted,

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